

# Betting on biology of risky behaviour

■ BY VICTORIA VAUGHAN

JUST as Singapore's first casinos are expected to open in the next few months, scientists and economists have discovered a gene that affects risk-taking behaviour such as gambling.

In economics, playing the lottery or a slot machine is a "longshot risk", a term coined by Professor Chew Soo Hong to describe the situation where a win is unlikely. He is one of the authors of a recent paper on a gene which controls risky behaviour.

With longshot risk, where there could be substantial gain, people generally end up forking out more than the expected payouts, said Prof Chew, an economist at the National University of Singapore.

For example, a punter, lured by the prospect of a windfall, could put \$10 into a slot machine, even if he stands to win on average \$5.

In lottery-style betting, such as horse racing or certain casino games, consumers tend to prefer longshot bets with low odds of a big win.

So instead of betting on the favourite which has a high chance of winning, they prefer to put their money on a horse which has a smaller chance of winning but will yield a better payout if it does.

Conversely, people who buy insurance are risk-averse. There is a small chance of a significant outcome but it deals with losses.

People voluntarily pay more than the average payout to insure against a potential loss.



**The team isolated a gene which is key in regulating risk-taking behaviours, such as taking longshot bets. ST FILE PHOTO**

Prof Chew was working with geneticists who isolated a gene: monoamine oxidase A (MAOA), which is key in regulating these behaviours, in a study of 350 subjects in Beijing.

Those with more active MAOA tend to take more longshot risks over gains such as buying lottery, and are less inclined to take longshot risks over losses, such as buying insurance.

Men – with more active MAOA – are more likely to bet on the lottery and less

likely to buy insurance than women, meaning that women tend to be more cautious, the study found.

The study participants were aged 18 to 62, and older subjects were also found to be less risk-averse.

This is the first study which looks at the brain's behaviour when taking long-shot risks, said Prof Chew.

It was published in the journal, PLoS ONE.

Said Prof Chew: "Some decisions have their roots in biology."

The biological processes involved in risk, a relatively new area of study, went down to a more fundamental level than psychological explanations long-accepted as influencing risk-taking, he said.

Associate Professor Munidasa Winslow, an addictions expert at Raffles Hospital, said: "It helps to know that there are some people who are predisposed to risk-taking behaviours, of which gambling is one.

"If they know they are high-risk, then they need to control or anticipate their responses to gaming or gambling, and have safety measures in place, such as stop limits for gambling – if not, they may end up chasing their losses in a totally irrational way."

Prof Chew recently moved to the NUS economics and finance department from the Hong Kong University of Science and Technology, and will be joined by co-author Professor Richard Ebstein from Hebrew University in Jerusalem, who arrives tomorrow to join the NUS Department of Psychology.

Previously, the pair have carried out a twin study which found that risk-taking is hereditary.

Together, they hope to make inroads into the field of biological economics, which is a new field which looks beyond the psychology of financial decisions to the biology of such decisions and behaviours.